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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,461	11/20/2003	Francois Kubica	245494US41X DIV	6844
22850	7590	06/06/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BEHNCKE, CHRISTINE M	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,461

Applicant(s)

KUBICA, FRANCOIS

Examiner

Christine M. Behncke

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14, 16-26 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 5, 15 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2005 and 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/863,894.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/02/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Amendments and Remarks filed 02 March 2005, in which claims 1-30 were presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pages, US Patent No. 5,774,818, in view of Trikha, US Patent No. 6,003,811.

3. **(Claims 1, 2, 13, 17 and 18)** Pages discloses a method for operating an aircraft, comprising the steps of: receiving guidance instructions and guidance parameters at a navigation computer (computer 12, Column 5, lines 26-35); transmitting automatic pilot instructions from said navigation computer to a flight control computer (PA 13, Column 5, lines 43-46), a single control function being embedded in said flight control computer (figure 4); receiving control instructions and said automatic pilot instructions at said flight control computer (Column 5, lines 43-46). Pages discloses computing a plurality of operating commands at the flight control computer but does not explicitly disclose wherein a first plurality or a second plurality of operating commands are generated specifically in automatic or manual modes.

However, Trikha teaches in the prior art in an automatic pilot mode, generating a first plurality of operating commands based on the automatic instructions at said flight control computer and, in manual mode, generating a second plurality of operating commands based on the control instructions at the flight control computer (Column 3, lines 17-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of Pages with the teachings of Trikha to illustrate the principle components of a fly-by-wire aircraft control system wherein the flight control computer generates the operating commands based on the automatic pilot instructions of the manual instructions of the pilot.

4. **(Claims 4, 14 and 19)** Pages discloses the method previously discussed but does not disclose the generation of a first and second commands. However, Trikha teaches wherein the first and second pluralities of operating commands are based on a single control function (Column 3, lines 17-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of Pages in view of Trikha with the further teachings of Trikha to illustrate the principle components of a fly-by-wire aircraft primary flight control system which includes that the flight control computer generates the operating commands based on the automatic pilot instructions or the manual instructions of the pilot.

5. **(Claims 6 and 16)** Pages discloses the method previously discussed but does not disclose a single control function. However, Trikha discloses the single control function is embedded in said flight control computer (primary flight computer 26). It

would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method disclosed by Pages in view of Trikha with the further teachings of Trikha to illustrate the principle components of a fly-by-wire aircraft primary flight control system which includes that the flight control computer generates the operating commands based on the automatic pilot instructions or the manual instructions of the pilot.

6. **(Claim 3)** Pages in view of Trikha discloses the method previously discussed, Pages further discloses the step of receiving control parameters at the flight control computer (figure 4, Column 5, lines 26-46)

7. **(Claims 7 and 20)** Pages in view of Trikha further discloses wherein the step of generating the automatic pilot instructions at the navigation computer based on the guidance instructions and on guidance parameters (Column 5, lines 26-35).

8. **(Claims 8 and 21)** Pages in view of Trikha discloses the method previously discussed, both Pages and Trikha further teach wherein the automatic pilot instructions correspond in nature to the control instructions (Pages: Column 5, lines 12-17; Trikha: Column 3, lines 7-24).

9. **(Claims 9-11 and 22-24)** Pages in view of Trikha discloses the method previously discussed; Pages and Trikha teach the transmitted automatic/control instructions include desired change in the aircraft's flight path (Pages: Column 5, lines 43-46; Trikha: Column 3, lines 7-24). It is well known in the art that the parameters corresponding to a vertical load factor, roll rate, and yaw are specifically used to designate and change the flight path. These parameters are essential in order to

correctly control the aircraft controlled surfaces and calculate the needed corrections to change the aircraft's flight path.

10. **(Claims 12 and 25)** Pages in view of Trikha discloses the method previously discussed, Pages further discloses wherein the step of transmitting the automatic pilot instructions from the navigation computer to the flight control computer is performed so that the flight control computer receives the automatic pilot instructions directly from the navigation computer without an intermediate step (figure 4).

11. **(Claim 26)** Pages further discloses wherein the step of receiving control parameters at said flight control computer comprises receiving said control parameters via an input different from both an input through which said control instructions are received and an input through which said automatic pilot instructions are received (figure 4, Column 5, lines 47-52).

12. **(Claim 28)** Pages further discloses comprising the step of transmitting said first plurality of operating commands from said flight control computer to a plurality of control surfaces (Column 5, lines 47-52).

13. **(Claim 29)** Pages further discloses comprising the step of receiving inertial information at said navigation computer (Column 1, lines 39-52 and Column 5, lines 47-55).

14. **(Claim 30)** Pages further suggests wherein a delay between a time at which said inertial information is received at said navigation computer and a time at which said first plurality of operating commands is transmitted from said flight control computer to said

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plurality of control surfaces is minimized (figure 4, Column 1, lines 39-52 and Column 5, lines 47-55).

Allowable Subject Matter

15. **Claims 5, 15, and 27** are objected to as being dependent upon a rejected base claim and are at present considered to overcome the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

16. Applicant's arguments filed 02 March 2005 have been fully considered but they are not persuasive.

Applicant contends the prior art Pages does not comprise any guidance instructions to the navigation computer. The Examiner respectfully disagrees.

Navigation computer (element computer 12) receives guidance instructions, flight plan and route constraints from device 11 (Column 5, lines 26-35).

Applicant contends the prior art Pages does not teach "transmitting automatic [pilot] instructions from said navigation computer to a flight control computer" and "receiving control instructions and said automatic pilot instructions at said flight control computer" because Pages does not show an analogous component to a flight control computer. The Examiner respectfully disagrees. Applicant's improvement is disclosed on page 6, lines 3-13 wherein navigational computer 9A receives guidance (heading,

vertical speed, altitude, etc.) instructions from device 10; calculates the commanded vertical load factor, roll rate, and yaw; transmits the instructions to the flight control computer 3; and the flight control computer calculates commands for the control surfaces (elevator, stabilizer, ailerons, rudder, etc.). Element 13, while labeled an automatic piloting device, receives automatic and control instructions from the computer 12. Pages teaches that the computer 12 receives pilot entered geographic points and route constraints transferred from device 11; computed route/flight paths based on the received data; transmits to element 13 these computed route/flight paths (figure 4); and element 15, with the navigational instrument data from element 15, calculates control parameters to "control surface actuators 14 in order to carry out the instructions thus computed" (Column 5, lines 47-52). Further it is well-known in the art that in-order to compute and follow a desired flight route/path, the heading, vertical speed, altitude, present location, desired future location, etc. of the aircraft should be known to the aircraft's control system.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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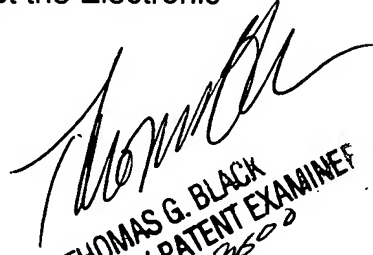
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

05-18-2005


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